

U.S. Serial No. 10/021,976  
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### AMENDMENTS TO THE CLAIMS

Claim 1 (currently amended): A method for producing oligomers having less than 40 carbon atoms using at least one ~~aliphatic olefinic monomer having one carbon-carbon double bond~~ selected from the group consisting of ethylene, propylene, butenes, hexenes, octenes and mixtures thereof, the method comprising the step of contacting a feed comprising the olefinic monomer under oligomerization conditions with a catalyst composition comprising the reaction product of:

(a) a compound having a formula selected from the group consisting of  $M[S_2C_2(R^aR^b)]_2$  and  $M[S_2C_6(R^1R^2R^3R^4)]_2$ , wherein M is a late transition metal,  $R^a$ ,  $R^b$ ,  $R^1$ ,  $R^2$ ,  $R^3$  and  $R^4$  are independently selected and may be the same or different and are selected from hydrogen, electron-withdrawing groups and unsubstituted and substituted hydrocarbyl groups; and

(b) an alkylaluminoxane activating cocatalyst,

whereby an oligomer is formed.

Claim 2 (original): The method of claim 1 wherein M is selected from one of Fe, Co, Ni, Pd, and Pt.

Claim 3 (previously amended): The method of claim 1 wherein the compound is selected from the group consisting of bis(dithiobenzil) nickel and bis[1,2-bis(trifluoromethyl)ethylene-1,2-dithiolato] nickel.

Claim 4 (cancelled)

Claim 5 (currently amended): The method of claim 1 4 wherein the cocatalyst is methylaluminoxane.

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Claim 6 (original): The method of claim 1 wherein the contacting is at a temperature in the range of from about 0°C to 100°C and at pressures of from about 15 to 2000 psig.

Claim 7 (original): The method of claim 1 wherein the contacting is conducted in a solvent.

Claim 8 (original): The method of claim 1 wherein the contacting is conducted in a gas phase.

Claim 9 (cancelled).

Claim 10 (currently amended): The method of claim 1 ~~9~~ wherein said olefinic monomer is ethylene.

Claim 11 (original): The method of claim 1 wherein the catalyst composition comprises a supported catalyst composition.

Claim 12 (original): The method of claim 11 wherein the supported catalyst composition comprises a silica supported catalyst composition.

Claim 13 (original): The method of claim 1 wherein the feed contains contaminants.

Claim 14 (original): The method of claim 13 wherein the contaminants comprise sulfur-containing compounds.

Claim 15 (previously amended): The method of claim 14 wherein the sulfur-containing compounds comprise H<sub>2</sub>S, mercaptans, sulfides and thiophenes.

Claim 16 (currently amended): A method for producing oligomers having less than 40 carbon atoms using at least one ~~aliphatic~~ olefinic monomer ~~having one carbon~~

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~~carbon double bond~~ selected from the group consisting of ethylene, propylene, butenes, hexenes, octenes and mixtures thereof, wherein the olefinic monomer is from a feed stream having sulfur-containing compounds, the method comprising the step of contacting the feed stream under oligomerization conditions with a catalyst composition comprising the reaction product of:

(a) a compound having a formula selected from the group consisting of  $M[S_2C_2(R^aR^b)]_2$  and  $M[S_2C_6(R^1R^2R^3R^4)]_2$ , wherein M is a late transition metal,  $R^a$ ,  $R^b$ ,  $R^1$ ,  $R^2$ ,  $R^3$  and  $R^4$  are independently selected and may be the same or different and are selected from hydrogen, electron-withdrawing groups and unsubstituted and substituted hydrocarbyl groups; and

(b) an alkylaluminumoxane activating cocatalyst,

whereby an oligomer is formed.